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**AN INVESTIGATION ON THE DETERMINANTS OF  
EFFECTIVE INTERNAL AUDITS IN THE KOGI STATE  
OF NIGERIA**



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**MASTER OF SCIENCE  
UNIVERSITI UTARA MALAYSIA  
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**AN INVESTIGATION OF THE DETERMINANTS OF EFFECTIVE INTERNAL  
AUDITS IN THE KOGI STATE OF NIGERIA**

**By**

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**UUM**  
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**TUNKU PUTERI INTAN SAFINAZ**  
**SCHOOL OF ACCOUNTANCY**  
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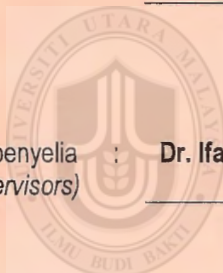
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## ABSTRACT

The objective of this study is to investigate the factors affecting internal audit effectiveness (IAE) in the Kogi State public service. Hence, this study employed a quantitative method through Random sampling method. To achieve the objectives of the study, the target sample size for this research were (132) internal auditors and (110) executives with total of (242). However, 363 questionnaires were distributed by adding up 50% to the (242) total for both respondents, which were distributed across the 15 ministries for the current study. Consequently, a total of (118; 86) for both internal auditors and executives respectively, summing up to (204) questionnaires were retained for analysis for both. The data was analyzed with the use of Partial Least Square-Structural Equation Modeling (PLS-SEM). The result of the study showed the relationship effects of management support, audit objectivity, audit independence, audit staff competency, quality of audit and career and advancement, with the IAE within the Kogi State public service. According to the findings of the result, management support has significant and positive contribution for the internal audit effectiveness, audit objectivity has significant and positive relationship with IAE, audit staff competency has positive and significant relationship with IAE, quality of audit work has positive and significant relationship with IAE. While the other two variables: audit independence and career and advancement did not support the hypotheses. Although four out of the six independent variables used for this study provided 46.1% of the contributions for IAE in the Kogi State public service, the variables have collective significance in identifying any non-compliance activities and add values for the IAE in the Kogi State public service.

**Key Words:** Internal Audit; Kogi State Public Service; internal audit effectiveness; determinants of internal audit effectiveness.

## ABSTRAK

Objektif kajian ini adalah untuk mengkaji faktor-faktor yang mempengaruhi keberkesanan audit dalaman (IAE) dalam perkhidmatan awam Negeri Kogi. Oleh itu, kajian ini menggunakan kaedah kuantitatif melalui tinjauan sampling kemudahan (random sampling survey). Untuk mencapai matlamat kajian, saiz sampel sasaran untuk kajian ini ialah 242 juruaudit dalaman dan eksekutif. Walau bagaimanapun, 363 soal selidik telah diedarkan ke seluruh 15 kementerian bagi kajian semasa, yang mana (151; 105) soal selidik telah dikembalikan daripada kedua-duanya (Audit Dalaman dan Eksekutif). Data tersebut telah dianalisis melalui penggunaan *Partial Least Square-Structural Equation Modeling* (PLS-SEM). Hasil kajian ini menunjukkan kesan hubungan sokongan pengurusan, objektif audit, kebebasan audit, kecekapan kakitangan audit, kualiti audit, dan kerjaya dan kemajuan, dengan IAE dalam perkhidmatan awam Negeri Kogi. Berdasarkan keputusan yang telah diperolehi, sokongan pengurusan mempunyai sumbangan yang signifikan dan positif untuk keberkesanan audit dalaman, objektif audit mempunyai hubungan yang signifikan dan positif dengan IAE, kecekapan kakitangan audit mempunyai hubungan yang positif dan signifikan dengan IAE, kualiti kerja audit mempunyai hubungan yang positif dan signifikan dengan IAE. Manakala dua pembolehubah lain: kebebasan audit dan kerjaya dan kemajuan tidak menyokong hipotesis. Walaupun empat daripada enam pembolehubah bebas yang telah digunakan untuk kajian ini menyumbang 46.1% untuk IAE dalam perkhidmatan awam Negeri Kogi, pembolehubah mempunyai kepentingan kolektif dalam mengenal pasti sebarang aktiviti yang bercanggah dan juga boleh menambah nilai-nilai bagi IAE dalam perkhidmatan awam Negeri Kogi.

Kata Kunci: Audit Dalaman; Perkhidmatan Awam Kogi Negeri; keberkesanan audit dalaman; penentu keberkesanan audit dalaman.



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## LIST OF ABBREVIATIONS

ACCA	Association of Chartered Certified Accountants
AGF	Accountant General of the Federation
AI	Auditors Independence
ANAN	Association of National Accounting Standard
AO	Auditors Objectivity
ASC	Audit Staff Competency
Aud.GF	Auditor General of the Federation
CA	Career and Advancement
CAMA	Companies and Allied Matters Act
CFRN	Constitution of the Federal Republic of Nigeria
CIMA	Chartered Institute of Management Accounting
IAE	Internal Audit Effectiveness
IBM SPSS	Integrated Business Machines Statistical Package for Social Sciences
ICAN	Institute of Chartered Accountants of Nigeria
IA	Internal Audit/Auditor
IIA	Institute of Internal Audit
IIARF	Institute of Internal Audit Research Foundation
KSPS	Kogi State Public Service
MS	Management support
PLS	Partial Least Squares
QA	Quality of Audit Work
RBV	Resource Based View
SEM	Structural Equation Modeling
SPEFA	Standard Public Expenditure and Financial Accountability



# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of the Study**

Hobbes (1651) stated that the era, prior to civilization was characterized by anarchy and the life of man was “solitary, poor, nasty, brutish and short”. That era was notorious as for the survival of the fittest syndrome, in this era, only the strong people survive, if you are weak, a stronger person takes over you and your property as there was no rule of law. Given the unsatisfactory nature of life then and the need for civilized and organized life, early philosophers advocated the social contract theory which was a precursor to modern government. Among the early advocates of the social contract theory were Grotious (1625); Hobbes (1651); Locke (1689); and Rosseau (1762). The social contract theory is an arrangement whereby, in order to protect people from the vagaries of a disorderly society, the society submits their individual sovereignty to a group of people called government, who enforce the law for the collective benefit of all.

The role of government evolved over time from the early era. Smith (1776) in his classical work, the wealth of Nation identified three basic roles of government. The first is the protection of citizen from external attacks. Secondly, is maintaining orderliness among citizen and thirdly, the provision and maintenance of public infrastructure. It is deduced from the above roles of government that funds will be required to maintain government services. In modern government, funding is provided from taxing citizens and from other common resources of the state. However, there is need for those entrusted with managing public funds to account for how such funds were expended. The need for

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**APPENDIX A**  
**QUESTIONNAIRE FOR EXECUTIVE**  
**COLLEGE OF BUSINESS**  
**UNIVERSITI UTARA MALAYSIA**

**ACADEMIC RESEARCH QUESTIONNAIRE**

June 30, 2017

Dear Sir/Madam,

I am Samir, a postgraduate student of Masters in Accounting from the school of TISSA. I am conducting a research on the factors that affect Internal Audit in Kogi state. The information obtain is crucial for the researcher to complete the research work.

This questionnaire is solely for the academic purpose. All information provided shall be treated with utmost confidentiality with the researcher. I undertake to report the result in such a way that anonymity of the respondent is preserved.

Thank you very much for your participation.

Sincerely,

Muhammed, Sameer

Tel No: +601126088074; +234703863018

E-mail: [muhammedsamir1010@gmail.com](mailto:muhammedsamir1010@gmail.com)



## INFORMATION

The effectiveness of internal audit contributes tremendously to the wellbeing and smooth running of every organization, meanwhile, the essence of this study is identify the factors that affects internal audit effectiveness in the Kogi state public service.

Please kindly give your response to the personal profile section.

### **PART I: DEMOGRAPHIC INFORMATION**

Please tick ☒ the option that correctly and accurately describes your circumstance:

1. What is your highest Academic education?

- ☐ Degree
- ☐ Masters
- ☐ Doctoral degree
- ☐ Others

2. What is your highest Professional education?

- ☐ ACCA
- ☐ ICAN
- ☐ ANAN
- ☐ Others

3. What is your Gender?

- ☐ Male
- ☐ Female

4. What is your field of study?

- ☐ Accounting
- ☐ Management
- ☐ Economics
- ☐ Others

5. What is your experience in the Kogi state Public Service?

- ☐ < 5 below years
- ☐ 10-20 years
- ☐ 21- 30 years
- ☐ Others

## PART II

**SECTION A:** The Questionnaire is designed in the Likert Scale Format, Please Tick [✓] or Circle the Appropriate Scale Point That Represents Your Opinion in the Table Below.

**GUIDELINES** In section A, please rate your level of agreement with the following statements as all questions have the same options (1 = Strongly Disagree SD, 2 = Disagree D, 3 = Neutral N, 4 = Agree A, 5 = Strongly Agree SA):

		SD	D	N	A	SA
<b>Internal audit effectiveness:</b>						
1	Internal auditor's usually informs the ministry when things are not going well.	1	2	3	4	5
2	The ministry is satisfied with the internal audit department	1	2	3	4	5
3	Internal auditors usually carry out their duties with regards to the ministry's objective.	1	2	3	4	5
4	Internal auditors can conveniently issue audit report because they know how to determine the frequency of noncompliance activities.	1	2	3	4	5
5	They are usually low or no complain about the report of the internal auditors because of how well they discharge their duties.	1	2	3	4	5
6	The internal auditor's always ensure that the ministry resources are well utilized.	1	2	3	4	5
7	Internal auditor's see to it that activities are carried out within the ministry in conformity with established rules and regulations	1	2	3	4	5
8	The advice of internal audit department gives an easy solution for correcting errors	1	2	3	4	5
9	Internal auditors are well trained so much so that they have the ability to manage risk within the organization.	1	2	3	4	5
10	Internal audit is playing the very role expected of it by the ministry.	1	2	3	4	5

Please indicate any comments you have in order to improve this questionnaire:

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Please, feel free to contact me on any issue(s) regarding to this questionnaire.

Thank you for your participation in answering this questionnaire.

**APPENDIX B**  
**QUESTIONNAIRE FOR INTERNAL AUDITORS**  
**COLLEGE OF BUSINESS**  
**UNIVERSITI UTARA MALAYSIA**

**ACADEMIC RESEARCH QUESTIONNAIRE**

June 29, 2017

Dear Sir/Madam,

I am Samir, a postgraduate student of Masters in Accounting from the school of TISSA. I am conducting a research on the factors that affect Internal Audit in Kogi state. The information obtain is crucial for the researcher to complete the research work.

This questionnaire is solely for the academic purpose. All information provided shall be treated with utmost confidentiality with the researcher. I undertake to report the result in such a way that anonymity of the respondent is preserved.

Thank you very much for your participation.

Sincerely,

Muhammed, Sameer

Tel No: +601126088074; +234703863018

E-mail: [muhammedsamir1010@gmail.com](mailto:muhammedsamir1010@gmail.com)

## INFORMATION

The effectiveness of internal audit contributes tremendously to the wellbeing and smooth running of every organization, meanwhile, the essence of this study is identify the factors that affects internal audit effectiveness in the Kogi state public service.

Please kindly give your response to the personal profile section, and note that the table afterwards is related to management support, auditor's independence, auditor's objectivity, audit staff competency, quality of audit work and career and advancement.

### **PART I: DEMOGRAPHIC INFORMATION**

Please tick ☒ the option that correctly and accurately describes your circumstance:

1. What is your highest Academic education?
  - ☐ Degree
  - ☐ Masters
  - ☐ Doctoral degree
  - ☐ Others
2. What is your highest Professional education?
  - ☐ ACCA
  - ☐ ICAN
  - ☐ ANAN
  - ☐ Others
3. What is your Gender?
  - ☐ Male
  - ☐ Female
4. What is your field of study?
  - ☐ Accounting
  - ☐ Management
  - ☐ Economics
  - ☐ Others
5. What is your experience in the Kogi state Public Service?
  - ☐ < 5 below years
  - ☐ 10-20 years
  - ☐ 20 and above
  - ☐ Others

## PART II (SECTIONS A – F)

### SECTION A: TOP MANAGEMENT SUPPORT

**GUIDELINES:** In section A, please rate your level of agreement with the following statements as all questions have the same options (1 = Strongly Disagree SD, 2 = Disagree D, 3 = Neutral N, 4 = Agree A, 5 = Strongly Agree SA):

	TOP MANAGEMENT SUPPORT	SD	D	N	A	SA
1	Management doesn't give internal audit the support it required to perform well.	1	2	3	4	5
2	They are not enough internal auditors to measure up the work required of the internal audit.	1	2	3	4	5
3	Management is not really aware of internal auditors wellbeing, as they always allocate little budget to the department.	1	2	3	4	5
4	Management does not provide internal audit enough support and encouragement for training and developing of staff.	1	2	3	4	5
5	Internal audit is always given the required cooperation from management, and they also have access to required information for their work.	1	2	3	4	5

### SECTION B: AUDITORS OBJECTIVITY

**GUIDELINES:** In section B, please rate your level of agreement with the following statements as all questions have the same options (1 = Strongly Disagree SD, 2 = Disagree D, 3 = Neutral N, 4 = Agree A, 5 = Strongly Agree SA):

	AUDITORS OBJECTIVITY	SD	D	N	A	SA
1	Impartial attitudes add to internal audit activity in the ministry.	1	2	3	4	5
2	Internal audit department activities meet the requirements of the internal audit code of ethics.	1	2	3	4	5
3	Internal audit fulfills the very purpose they were set up for.	1	2	3	4	5
4	Internal audit supports the ministry in meeting up with her demands.	1	2	3	4	5

### SECTION C: AUDITORS INDEPENDENCE

**GUIDELINES:** In section C, please rate your level of agreement with the following statements as all questions have the same options (1 = Strongly Disagree SD, 2 = Disagree D, 3 = Neutral N, 4 = Agree A, 5 = Strongly Agree SA):

	AUDITORS INDEPENDENCE	SD	D	N	A	SA
1	Internal audit performs internal audit activities without any external or internal interference from anybody or my office.	1	2	3	4	5
2	Based on audit standards and the ministry's policy, Internal audit freely decide the scope, time and extent of auditing procedures.	1	2	3	4	5
3	Internal audit feels free to report any audit findings in their report during the cause of the audit work, and they report directly to the responsible body.	1	2	3	4	5
4	Internal audit can freely access necessary documents information and data about the organization for my audit work	1	2	3	4	5

### SECTION D: AUDIT STAFF COMPETENCY

**GUIDELINES:** In section D, please rate your level of agreement with the following statements as all questions have the same options (1 = Strongly Disagree SD, 2 = Disagree D, 3 = Neutral N, 4 = Agree A, 5 = Strongly Agree SA):

	AUDIT STAFF COMPETENCY	SD	D	N	A	SA
1	In order to maintain skills and competency, the ministry allows the internal audit staff to participate in trainings and development programs.	1	2	3	4	5
2	Internal auditors have the necessary qualification in auditing that enable them audit all the ministry's systems (financial, operational, logistical and computerized).	1	2	3	4	5
3	The ministry sponsors Internal Audit to go for professional certification	1	2	3	4	5
4	Internal audit has little or no intention to improve their knowledge	1	2	3	4	5

### SECTION E: QUALITY OF AUDIT WORK

**GUIDELINES:** In section E, please rate your level of agreement with the following statements as all questions have the same options (1 = Strongly Disagree SD, 2 = Disagree D, 3 = Neutral N, 4 = Agree A, 5 = Strongly Agree SA):

	QUALITY OF AUDIT WORK	SD	D	N	A	SA
1	Internal auditors are in charge of designing the annual audit plan.	1	2	3	4	5
2	All the areas audited are important to the ministry.	1	2	3	4	5
3	Internal audit usually covers all the units in the ministry including their problems.	1	2	3	4	5
4	The response of those audited by the internal auditors is submitted in writing and is usually important and necessary.	1	2	3	4	5
5	Internal auditors usually take follow up actions to correct the problems found during the cause of their work.	1	2	3	4	5
6	The internal auditors also perform other activities such as developing procedures and conducting economic and financial audits.	1	2	3	4	5

### SECTION F: CAREER AND ADVANCEMENT

**GUIDELINES:** In section E, please rate your level of agreement with the following statements as all questions have the same options (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree):

	AUDITORS INDEPENDENCE	SD	D	N	A	SA
1	Internal audit is one of the stages in training and preparing employees in the ministry.	1	2	3	4	5
2	Internal audit is one stage in the promotion process of employees in the ministry.	1	2	3	4	5
3	Internal audit is considered a stage in the career and development of employees in the organization	1	2	3	4	5

Please indicate any comments you have in order to improve this questionnaire:

.....  
.....  
.....  
.....  
.....  
.....

Please, feel free to contact me on any issue(s) regarding to this questionnaire.

Thank you for your participation in answering this questionnaire.

MUHAMMED, SAMIR ABUBAKAR.

Tel No: +601126088074; +2348066767217

E-mail: [muhammedsamir1010@gmail.com](mailto:muhammedsamir1010@gmail.com)





## **APPENDIX C**

### **ACKNOWLEDGEMENT LETTER FOR BOTH EXECUTIVES AND INTERNAL AUDITORS**



# GOVERNMENT OF KOGI STATE OF NIGERIA



OFFICE OF THE AUDITOR GENERAL  
KOGI STATE

GOVERNMENT HOUSE LOKOJA, OPP.  
TOWNSHIP STADIUM P.M.B. 1161.

WEBSITE: WWW.KOGI STATE.GOV.NG

REF NO... AGS/1525/07

DATE....14/8/2017

The Assistant Registrar,

Othman Yeop Abdullah

Graduate School of Business

Universiti Utara Malaysia

## Re: Letter of Recommendation For Data collection and Research work

I am directed to refer to your letter Ref: UUM/OYAGSB/R-4/4/1 of 12<sup>th</sup> July, 2017 and to endorse that the Auditor General of the state has approved the conduct of Research by ABUBAKAR MUHAMMED SAMIR IKOOJO (Matric No:820680) using the amenities and data to be provided by the office of the Auditor General.

Please accept the assurance of the Auditor General of the state's highest regards.

Idris Omepa

Deputy Director of Audit

[IDomepa2025@yahoo.com](mailto:IDomepa2025@yahoo.com)

For: Auditor General of the State

# GOVERNMENT OF KOGI STATE OF NIGERIA



OFFICE OF THE HEAD OF SERVICE  
KOGI STATE

P.M.B. 1161, OPP. OLD MARKET,  
LOKOJA, KOGI STATE NIGERIA,  
SECRETARIAT

REF NO...HOS/1460/02

DATE....12/8/2017

The Assistant Registrar,

Othman Yeop Abdullah

Graduate School of Business

Universiti Utara Malaysia

## Re: Letter of Recommendation For Data collection and Research work

I am directed to refer to your letter Ref: UUM/OYAGSB/R-4/4/1 of 12<sup>th</sup> July, 2017 and to confirm that the Head of Service of the state has approved the conduct of Research by ABUBAKAR MUHAMMED SAMIR IKOOJO (Matric No:820680) using the facilities and data to be supplied by the office of the Head of Service.

Please accept the assurance of the Head of Service of the state's highest regards.

Jonah Davids

Perm sec (HOS)

JOHDI1000@gmail.com

For: Head of Service of the State

## **APPENDIX D**

### **FINAL RESULTS**



## Final Results

### Path Coefficients

#### Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
AI -> IAE	0.073	0.068	0.085	0.858	0.391
AO -> IAE	0.256	0.269	0.091	2.809	0.005
ASC -> IAE	0.225	0.220	0.068	3.291	0.001
CA -> IAE	0.122	0.124	0.098	1.254	0.210
MS -> IAE	-0.170	-0.175	0.081	2.106	0.036
QA -> IAE	0.299	0.298	0.117	2.548	0.011

#### Confidence Intervals

	Original Sample (O)	Sample Mean (M)	2.5%	97.5%
AI -> IAE	0.073	0.068	-0.088	0.232
AO -> IAE	0.256	0.269	0.093	0.457
ASC -> IAE	0.225	0.220	0.076	0.342
CA -> IAE	0.122	0.124	-0.070	0.328
MS -> IAE	-0.170	-0.175	-0.316	-0.017
QA -> IAE	0.299	0.298	0.078	0.518

#### Confidence Intervals Bias Corrected

	Original Sample (O)	Sample Mean (M)	Bias	2.5%	97.5%
AI -> IAE	0.073	0.068	-0.005	-0.082	0.237
AO -> IAE	0.256	0.269	0.012	0.072	0.427
ASC -> IAE	0.225	0.220	-0.005	0.078	0.348
CA -> IAE	0.122	0.124	0.001	-0.066	0.331
MS -> IAE	-0.170	-0.175	-0.005	-0.310	-0.006

QA -> IAE	0.299	0.298	-0.001	0.087	0.528
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## Total Effects

### Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
AI -> IAE	0.073	0.068	0.085	0.858	0.391
AO -> IAE	0.256	0.269	0.091	2.809	0.005
ASC -> IAE	0.225	0.220	0.068	3.291	0.001
CA -> IAE	0.122	0.124	0.098	1.254	0.210
MS -> IAE	-0.170	-0.175	0.081	2.106	0.036
QA -> IAE	0.299	0.298	0.117	2.548	0.011

### Confidence Intervals

	Original Sample (O)	Sample Mean (M)	2.5%	97.5%
AI -> IAE	0.073	0.068	-0.088	0.232
AO -> IAE	0.256	0.269	0.093	0.457
ASC -> IAE	0.225	0.220	0.076	0.342
CA -> IAE	0.122	0.124	-0.070	0.328
MS -> IAE	-0.170	-0.175	-0.316	-0.017
QA -> IAE	0.299	0.298	0.078	0.518



### Confidence Intervals Bias Corrected

	Original Sample (O)	Sample Mean (M)	Bias	2.5%	97.5%
AI -> IAE	0.073	0.068	-0.005	-0.082	0.237
AO -> IAE	0.256	0.269	0.012	0.072	0.427
ASC -> IAE	0.225	0.220	-0.005	0.078	0.348
CA -> IAE	0.122	0.124	0.001	-0.066	0.331
MS -> IAE	-0.170	-0.175	-0.005	-0.310	-0.006
QA -> IAE	0.299	0.298	-0.001	0.087	0.528

### Outer Loadings

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
AI1 <- AI	0.831	0.832	0.025	32.634	0.000
AI2 <- AI	0.845	0.841	0.028	29.933	0.000
AI3 <- AI	0.827	0.824	0.030	27.794	0.000
AI4 <- AI	0.699	0.695	0.055	12.770	0.000
AO1 <- AO	0.744	0.745	0.044	16.922	0.000
AO2 <- AO	0.841	0.837	0.031	27.404	0.000
AO3 <- AO	0.881	0.880	0.017	52.557	0.000
AO4 <- AO	0.751	0.746	0.041	18.174	0.000
ASC1 <- ASC	0.904	0.905	0.017	52.739	0.000
ASC2 <- ASC	0.902	0.902	0.016	54.759	0.000
ASC3 <- ASC	0.913	0.914	0.015	59.061	0.000
CA1 <- CA	0.922	0.922	0.013	69.000	0.000
CA2 <- CA	0.907	0.904	0.020	45.212	0.000
CA3 <- CA	0.899	0.900	0.021	42.718	0.000

IA1 <- IAE	0.828	0.828	0.028	29.270	0.000
IA10 <- IAE	0.798	0.798	0.030	26.796	0.000
IA2 <- IAE	0.872	0.872	0.022	39.360	0.000
IA3 <- IAE	0.857	0.857	0.021	41.594	0.000
IA4 <- IAE	0.859	0.857	0.020	43.328	0.000
IA5 <- IAE	0.753	0.751	0.038	19.934	0.000
IA6 <- IAE	0.729	0.726	0.044	16.681	0.000
IA7 <- IAE	0.618	0.614	0.063	9.863	0.000
IA8 <- IAE	0.629	0.624	0.053	11.959	0.000
IA9 <- IAE	0.800	0.802	0.029	27.618	0.000
MS1 <- MS	0.801	0.796	0.049	16.318	0.000
MS2 <- MS	0.891	0.890	0.022	39.688	0.000
MS3 <- MS	0.916	0.917	0.015	61.108	0.000
MS4 <- MS	0.857	0.857	0.024	35.958	0.000
QA1 <- QA	0.790	0.788	0.040	19.928	0.000
QA2 <- QA	0.874	0.872	0.021	42.377	0.000
QA3 <- QA	0.836	0.834	0.048	17.483	0.000
QA4 <- QA	0.805	0.804	0.033	24.131	0.000
QA5 <- QA	0.883	0.883	0.018	50.260	0.000
QA6 <- QA	0.829	0.828	0.031	27.025	0.000

### Confidence Intervals

	Original Sample (O)	Sample Mean (M)	2.5%	97.5%
AI1 <- AI	0.831	0.832	0.775	0.876
AI2 <- AI	0.845	0.841	0.781	0.888
AI3 <- AI	0.827	0.824	0.760	0.881
AI4 <- AI	0.699	0.695	0.580	0.795
AO1 <- AO	0.744	0.745	0.642	0.824



AO2 <- AO	0.841	0.837	0.766	0.887
AO3 <- AO	0.881	0.880	0.845	0.912
AO4 <- AO	0.751	0.746	0.651	0.815
ASC1 <- ASC	0.904	0.905	0.864	0.933
ASC2 <- ASC	0.902	0.902	0.862	0.929
ASC3 <- ASC	0.913	0.914	0.876	0.939
CA1 <- CA	0.922	0.922	0.892	0.945
CA2 <- CA	0.907	0.904	0.863	0.937
CA3 <- CA	0.899	0.900	0.852	0.936
IA1 <- IAE	0.828	0.828	0.772	0.875
IA10 <- IAE	0.798	0.798	0.737	0.847
IA2 <- IAE	0.872	0.872	0.825	0.909
IA3 <- IAE	0.857	0.857	0.815	0.895
IA4 <- IAE	0.859	0.857	0.814	0.893
IA5 <- IAE	0.753	0.751	0.670	0.816
IA6 <- IAE	0.729	0.726	0.632	0.805
IA7 <- IAE	0.618	0.614	0.484	0.721
IA8 <- IAE	0.629	0.624	0.510	0.729
IA9 <- IAE	0.800	0.802	0.735	0.850
MS1 <- MS	0.801	0.796	0.675	0.870
MS2 <- MS	0.891	0.890	0.839	0.930
MS3 <- MS	0.916	0.917	0.884	0.945
MS4 <- MS	0.857	0.857	0.801	0.900
QA1 <- QA	0.790	0.788	0.705	0.861
QA2 <- QA	0.874	0.872	0.830	0.911
QA3 <- QA	0.836	0.834	0.725	0.902
QA4 <- QA	0.805	0.804	0.731	0.864
QA5 <- QA	0.883	0.883	0.846	0.914
QA6 <- QA	0.829	0.828	0.762	0.879

### Confidence Intervals Bias Corrected

	Original Sample (O)	Sample Mean (M)	Bias	2.5%	97.5%
AI1 <- AI	0.831	0.832	0.001	0.773	0.874
AI2 <- AI	0.845	0.841	-0.004	0.786	0.891
AI3 <- AI	0.827	0.824	-0.003	0.765	0.883

AI4 <- AI	0.699	0.695	-0.004	0.580	0.795
AO1 <- AO	0.744	0.745	0.001	0.641	0.822
AO2 <- AO	0.841	0.837	-0.004	0.770	0.889
AO3 <- AO	0.881	0.880	-0.001	0.849	0.914
AO4 <- AO	0.751	0.746	-0.005	0.653	0.816
ASC1 <- ASC	0.904	0.905	0.001	0.862	0.931
ASC2 <- ASC	0.902	0.902	0.001	0.858	0.927
ASC3 <- ASC	0.913	0.914	0.001	0.874	0.936
CA1 <- CA	0.922	0.922	0.000	0.891	0.944
CA2 <- CA	0.907	0.904	-0.003	0.866	0.938
CA3 <- CA	0.899	0.900	0.001	0.838	0.928
IA1 <- IAE	0.828	0.828	0.000	0.763	0.873
IA10 <- IAE	0.798	0.798	0.001	0.720	0.841
IA2 <- IAE	0.872	0.872	0.000	0.822	0.906
IA3 <- IAE	0.857	0.857	0.000	0.810	0.893
IA4 <- IAE	0.859	0.857	-0.002	0.818	0.894
IA5 <- IAE	0.753	0.751	-0.003	0.677	0.819
IA6 <- IAE	0.729	0.726	-0.004	0.633	0.806
IA7 <- IAE	0.618	0.614	-0.003	0.466	0.713
IA8 <- IAE	0.629	0.624	-0.004	0.522	0.731
IA9 <- IAE	0.800	0.802	0.001	0.723	0.840
MS1 <- MS	0.801	0.796	-0.005	0.674	0.870
MS2 <- MS	0.891	0.890	-0.001	0.834	0.925
MS3 <- MS	0.916	0.917	0.001	0.877	0.940
MS4 <- MS	0.857	0.857	-0.001	0.802	0.903
QA1 <- QA	0.790	0.788	-0.002	0.704	0.861
QA2 <- QA	0.874	0.872	-0.002	0.830	0.911
QA3 <- QA	0.836	0.834	-0.002	0.715	0.899
QA4 <- QA	0.805	0.804	-0.001	0.728	0.859
QA5 <- QA	0.883	0.883	0.001	0.845	0.914
QA6 <- QA	0.829	0.828	-0.002	0.766	0.880

R Square

Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
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IAE	0.469	0.483	0.059	7.927	0.000
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### Confidence Intervals

	Original Sample (O)	Sample Mean (M)	2.5%	97.5%
IAE	0.469	0.483	0.361	0.597

### Confidence Intervals Bias Corrected

	Original Sample (O)	Sample Mean (M)	Bias	2.5%	97.5%
IAE	0.469	0.483	0.015	0.307	0.560

### f Square

### Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
AI -> IAE	0.004	0.009	0.012	0.334	0.738
AO -> IAE	0.050	0.061	0.040	1.267	0.206
ASC -> IAE	0.051	0.055	0.033	1.558	0.120
CA -> IAE	0.012	0.019	0.021	0.565	0.573
MS -> IAE	0.027	0.034	0.026	1.020	0.308
QA -> IAE	0.066	0.082	0.070	0.946	0.345

### Confidence Intervals

	Original Sample (O)	Sample Mean (M)	2.5%	97.5%
AI -> IAE	0.004	0.009	0.000	0.044
AO -> IAE	0.050	0.061	0.007	0.161
ASC -> IAE	0.051	0.055	0.005	0.124
CA -> IAE	0.012	0.019	0.000	0.079

IAE				
MS -> IAE	0.027	0.034	0.001	0.097
QA -> IAE	0.066	0.082	0.004	0.257

### Confidence Intervals Bias Corrected

	Original Sample (O)	Sample Mean (M)	Bias	2.5%	97.5%
AI -> IAE	0.004	0.068	0.064	-0.173	0.112
AO -> IAE	0.050	0.269	0.218	0.014	0.014
ASC -> IAE	0.051	0.220	0.169	-0.007	0.005
CA -> IAE	0.012	0.124	0.112	-0.137	0.083
MS -> IAE	0.027	-0.175	-0.202	0.054	0.054
QA -> IAE	0.066	0.298	0.232	-0.029	0.038

### Average Variance Extracted (AVE)

### Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
AI	0.644	0.642	0.034	18.759	0.000
AO	0.650	0.648	0.031	21.318	0.000
ASC	0.821	0.823	0.021	38.275	0.000
CA	0.827	0.826	0.024	33.776	0.000
IAE	0.607	0.607	0.029	20.798	0.000
MS	0.752	0.751	0.027	28.196	0.000
QA	0.700	0.699	0.025	27.475	0.000

### Confidence Intervals

	Original Sample (O)	Sample Mean (M)	2.5%	97.5%
AI	0.644	0.642	0.579	0.710
AO	0.650	0.648	0.587	0.704
ASC	0.821	0.823	0.780	0.864
CA	0.827	0.826	0.778	0.869
IAE	0.607	0.607	0.550	0.661
MS	0.752	0.751	0.696	0.800
QA	0.700	0.699	0.653	0.750

### Confidence Intervals Bias Corrected

	Original Sample (O)	Sample Mean (M)	Bias	2.5%	97.5%
AI	0.644	0.642	-0.003	0.582	0.714
AO	0.650	0.648	-0.002	0.590	0.709
ASC	0.821	0.823	0.002	0.773	0.858
CA	0.827	0.826	-0.001	0.778	0.870
IAE	0.607	0.607	-0.001	0.550	0.662
MS	0.752	0.751	-0.001	0.693	0.797
QA	0.700	0.699	-0.001	0.653	0.750

### Composite Reliability

### Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
AI	0.878	0.876	0.016	53.466	0.000
AO	0.881	0.879	0.014	60.944	0.000
ASC	0.932	0.933	0.009	#####	0.000
CA	0.935	0.934	0.011	88.844	0.000
IAE	0.939	0.938	0.007	#####	0.000
MS	0.924	0.923	0.010	89.274	0.000
QA	0.933	0.933	0.008	#####	0.000

### Confidence Intervals

	Original Sample (O)	Sample Mean (M)	2.5%	97.5%
AI	0.878	0.876	0.845	0.907
AO	0.881	0.879	0.849	0.905
ASC	0.932	0.933	0.914	0.950
CA	0.935	0.934	0.913	0.952
IAE	0.939	0.938	0.922	0.951
MS	0.924	0.923	0.901	0.941
QA	0.933	0.933	0.918	0.947

### Confidence Intervals Bias Corrected

	Original Sample (O)	Sample Mean (M)	Bias	2.5%	97.5%
AI	0.878	0.876	-0.002	0.847	0.909
AO	0.881	0.879	-0.002	0.851	0.907
ASC	0.932	0.933	0.001	0.911	0.948
CA	0.935	0.934	0.000	0.913	0.953
IAE	0.939	0.938	-0.001	0.923	0.951
MS	0.924	0.923	-0.001	0.900	0.940
QA	0.933	0.933	-0.001	0.918	0.947

rho\_A

### Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
AI	0.818	0.818	0.028	29.525	0.000
AO	0.833	0.836	0.023	35.934	0.000
ASC	0.895	0.899	0.016	54.479	0.000
CA	0.898	0.902	0.017	53.195	0.000
IAE	0.932	0.932	0.009	#####	0.000
MS	0.895	0.906	0.020	44.625	0.000
QA	0.918	0.921	0.010	92.197	0.000

### Confidence Intervals

	Original Sample (O)	Sample Mean (M)	2.5%	97.5%
AI	0.818	0.818	0.761	0.870
AO	0.833	0.836	0.785	0.879
ASC	0.895	0.899	0.862	0.929
CA	0.898	0.902	0.864	0.933
IAE	0.932	0.932	0.914	0.948
MS	0.895	0.906	0.870	0.943
QA	0.918	0.921	0.900	0.939

### Confidence Intervals Bias Corrected

	Original Sample (O)	Sample Mean (M)	Bias	2.5%	97.5%
AI	0.818	0.818	0.000	0.756	0.868
AO	0.833	0.836	0.003	0.778	0.870
ASC	0.895	0.899	0.004	0.851	0.918
CA	0.898	0.902	0.004	0.848	0.922
IAE	0.932	0.932	0.001	0.911	0.946
MS	0.895	0.906	0.011	0.855	0.917
QA	0.918	0.921	0.003	0.894	0.934

### Cronbach's Alpha

### Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
AI	0.813	0.810	0.029	28.006	0.000
AO	0.819	0.816	0.025	32.957	0.000
ASC	0.891	0.892	0.016	56.058	0.000
CA	0.895	0.894	0.018	49.709	0.000
IAE	0.926	0.925	0.010	96.890	0.000
MS	0.889	0.889	0.016	55.316	0.000
QA	0.914	0.913	0.011	86.995	0.000

### Confidence Intervals

	Original Sample (O)	Sample Mean (M)	2.5%	97.5%
AI	0.813	0.810	0.754	0.864
AO	0.819	0.816	0.764	0.860
ASC	0.891	0.892	0.859	0.921
CA	0.895	0.894	0.858	0.925
IAE	0.926	0.925	0.905	0.942
MS	0.889	0.889	0.854	0.916
QA	0.914	0.913	0.893	0.933

### Confidence Intervals Bias Corrected

	Original Sample (O)	Sample Mean (M)	Bias	2.5%	97.5%
AI	0.813	0.810	-0.004	0.756	0.865
AO	0.819	0.816	-0.003	0.766	0.860
ASC	0.891	0.892	0.001	0.854	0.917
CA	0.895	0.894	-0.001	0.858	0.925
IAE	0.926	0.925	-0.001	0.905	0.943
MS	0.889	0.889	-0.001	0.851	0.914
QA	0.914	0.913	-0.001	0.893	0.933

### Heterotrait-Monotrait Ratio (HTMT)

### Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
AO -> AI	0.815	0.818	0.049	16.785	0.000
ASC -> AI	0.773	0.771	0.049	15.922	0.000
ASC -> AO	0.628	0.626	0.058	10.823	0.000
CA -> AI	0.610	0.602	0.072	8.511	0.000
CA -> AO	0.510	0.501	0.072	7.054	0.000



CA -> ASC	0.513	0.508	0.068	7.591	0.000
IAE -> AI	0.594	0.584	0.071	8.408	0.000
IAE -> AO	0.601	0.596	0.059	10.225	0.000
IAE -> ASC	0.568	0.558	0.062	9.106	0.000
IAE -> CA	0.581	0.569	0.068	8.527	0.000
MS -> AI	0.684	0.684	0.078	8.763	0.000
MS -> AO	0.795	0.795	0.047	16.880	0.000
MS -> ASC	0.534	0.530	0.068	7.868	0.000
MS -> CA	0.418	0.415	0.091	4.596	0.000
MS -> IAE	0.382	0.373	0.075	5.086	0.000
QA -> AI	0.625	0.620	0.065	9.652	0.000
QA -> AO	0.622	0.616	0.066	9.386	0.000
QA -> ASC	0.475	0.470	0.076	6.239	0.000
QA -> CA	0.806	0.803	0.049	16.522	0.000
QA -> IAE	0.620	0.612	0.064	9.685	0.000
QA -> MS	0.554	0.548	0.078	7.101	0.000

#### Confidence Intervals

	Original Sample (O)	Sample Mean (M)	2.5%	97.5%
AO -> AI	0.815	0.818	0.706	0.902
ASC -> AI	0.773	0.771	0.674	0.856
ASC -> AO	0.628	0.626	0.506	0.730
CA -> AI	0.610	0.602	0.455	0.726
CA -> AO	0.510	0.501	0.355	0.640
CA -> ASC	0.513	0.508	0.364	0.629
IAE -> AI	0.594	0.584	0.435	0.713
IAE -> AO	0.601	0.596	0.479	0.706
IAE -> ASC	0.568	0.558	0.429	0.673
IAE -> CA	0.581	0.569	0.430	0.698

MS -> AI	0.684	0.684	0.522	0.820
MS -> AO	0.795	0.795	0.700	0.882
MS -> ASC	0.534	0.530	0.379	0.644
MS -> CA	0.418	0.415	0.218	0.585
MS -> IAE	0.382	0.373	0.230	0.516
QA -> AI	0.625	0.620	0.497	0.738
QA -> AO	0.622	0.616	0.478	0.749
QA -> ASC	0.475	0.470	0.321	0.611
QA -> CA	0.806	0.803	0.701	0.884
QA -> IAE	0.620	0.612	0.480	0.727
QA -> MS	0.554	0.548	0.389	0.693

#### Confidence Intervals Bias Corrected

	Original Sample (O)	Sample Mean (M)	Bias	2.5%	97.5%
AO -> AI	0.815	0.818	0.003	0.695	0.895
ASC -> AI	0.773	0.771	-0.002	0.670	0.855
ASC -> AO	0.628	0.626	-0.002	0.494	0.726
CA -> AI	0.610	0.602	-0.008	0.466	0.733
CA -> AO	0.510	0.501	-0.009	0.380	0.659
CA -> ASC	0.513	0.508	-0.004	0.368	0.631
IAE -> AI	0.594	0.584	-0.010	0.459	0.722
IAE -> AO	0.601	0.596	-0.005	0.497	0.718
IAE -> ASC	0.568	0.558	-0.010	0.444	0.679
IAE -> CA	0.581	0.569	-0.012	0.449	0.718
MS -> AI	0.684	0.684	0.000	0.516	0.810
MS -> AO	0.795	0.795	0.000	0.694	0.875
MS -> ASC	0.534	0.530	-0.003	0.378	0.639
MS -> CA	0.418	0.415	-0.003	0.218	0.585
MS -> IAE	0.382	0.373	-0.009	0.256	0.529
QA -> AI	0.625	0.620	-0.005	0.509	0.757
QA -> AO	0.622	0.616	-0.005	0.488	0.754
QA -> ASC	0.475	0.470	-0.006	0.332	0.617
QA -> CA	0.806	0.803	-0.003	0.701	0.884
QA -> IAE	0.620	0.612	-0.008	0.487	0.739
QA -> MS	0.554	0.548	-0.006	0.416	0.709